IN THE CLAIMS

Please cancel Claims 1-42 without prejudice and add the following new Claims:

43. (New) A device for use in a bus system that supports a plurality n of message objects, comprising:

a plurality of registers associated with each message object, including at least one object match ID register that contains a multi-bit object match ID field, and at least one object mask register that contains a multi-bit object mask field;

a module that processes incoming messages, wherein the module:

assembles a multi-bit screener ID from selected bits of each incoming message to be acceptance filtered;

compares the bits comprising the screener ID with corresponding bits of the object match ID field associated with each of at least designated ones of the plurality n of message objects, disregarding any bits of each object match ID field that are masked by corresponding bits of the associated object mask field; and,

determines whether any of the comparisons results in a match;

wherein any selected one or more bits of the object match ID field associated with each of the plurality n of message objects can be set to '1' or '0', and any selected one or more bits of the object mask field associated with each of the plurality n of message objects can be set to '1' or '0' in order to mask any selected one or more bits of the associated object match ID field, whereby the combination of the object match ID field and the object mask field associated with each of the plurality n of message objects comprises a fully programmable match and mask filter; and,

wherein $n \geq 3$.

44. (New) The device of Claim 43, wherein the module is a CAN module.

45. (New) The device as set forth in Claim 44, wherein:

a received message to be acceptance filtered comprises a standard CAN frame; and,

the screener ID field comprises 11 bits of a CAN ID field of a header portion of the standard CAN frame, 8 bits of a first data byte of the standard CAN frame, 8 bits of a second data byte of the standard CAN frame, two don't care bits, and an IDE bit.

46. (New) The device of Claim 45, wherein the IDE bit is not maskable, and the two don't care bits are required to be masked.

47. (New) The device as set forth in Claim 43, wherein:

a received message to be acceptance filtered comprises an extended CAN frame; and,

the screener ID field comprises 29 bits of a CAN ID field of a header portion of the standard CAN frame, and an IDE bit.

48. (New) A processor that supports a plurality n of message objects, comprising:

a processor core that runs applications;

a data memory space;

a plurality of message buffers associated with respective ones of the message objects, the plurality of message buffers being located in the data memory space;

a plurality of registers associated with each message object, including at least one object match ID register that contains a multi-bit object match ID field, and at least one object mask register that contains a multi-bit object mask field;

a module that processes incoming messages, wherein the module:

assembles a multi-bit screener ID from selected bits of each incoming message to be acceptance filtered;

compares the bits comprising the screener ID with corresponding bits of the object match ID field associated with each of at least designated ones of the plurality n of message objects, disregarding any bits of each object match ID field that are masked by corresponding bits of the associated object mask field; and,

determines whether any of the comparisons results in a match;

a DMA engine that enables the module to directly access the message buffers without interrupting the processor core;

wherein an incoming message for which a match is detected is stored by the DMA engine in the message buffer associated with the matching message object;

wherein any selected one or more bits of the object match ID field associated with each of the plurality n of message objects can be set to '1' or '0', and any selected one or more bits of the object mask field associated with each of the plurality n of message objects can be set to '1' or '0' in order to mask any selected one or more bits of the associated object match ID field, whereby the combination of the object match ID field and the object mask field associated with each of the plurality n of message objects comprises a fully programmable match and mask filter; and,

wherein $n \geq 3$.

49. (New) The processor of Claim 48, wherein the applications are CAN applications.

50. (New) The processor of Claim 48, wherein the module is a CAN/CAL module.

51. (New) The processor of Claim 48, wherein:

the message objects are uniquely numbered; and,

if more than one match is detected, designating a lowest-numbered one of the message objects to be the matching message object.

52. (New) The processor of Claim 48, wherein the plurality of registers comprise memory-mapped registers.

53. (New) The processor of Claim 48, wherein the plurality of memory-mapped registers are mapped to a respective portion of the data memory space.

54. (New) The processor of Claim 48, wherein:

a received message to be acceptance filtered comprises a standard CAN frame; and,

the screener ID field comprises 11 bits of a CAN ID field of a header portion of the standard CAN frame, 8 bits of a first data byte of the standard CAN frame, 8 bits of a second data byte of the standard CAN frame, two don't care bits, and an IDE bit.

55. (New) A bus system comprising a device that supports a plurality n of message objects each of which has an associated message buffer, at least one associated match ID register, and at least one associated mask register, a method for acceptance filtering incoming CAN frames, the method including the steps of:

programming the at least one match ID register associated with each of at least designated ones of the message objects by selectively setting each of the bits in a multi-bit match ID field contained therein to '1' or '0';

programming the at least one mask register associated with each of the at least designated ones of the message objects by selectively setting each of the bits in a multi-bit mask field contained therein to '1' or '0';

extracting a multi-bit screener ID field from a received CAN frame;

comparing the extracted screener ID field to the multi-bit match ID field stored in the at least one match ID register associated with each of the at least designated ones of the message objects,

excluding from the comparison any bits of the match ID field masked by corresponding bits of the associated mask field stored in the at least one associated mask register; and,

if a match if found as a result of the comparing step, storing data bytes of the received CAN frame in the message buffer associated with the matching message object;

wherein $n \geq 3$.

56. (New) The method as set forth in Claim 35, wherein the designated ones of the message objects comprise all enabled message objects that have been designated as receive message objects.

57. (New) A buys system comprising a device that supports a plurality n of message objects, comprising:

a plurality of registers associated with each message object, including at least one object match ID register that contains a multi-bit object match ID field, and at least one object mask register that contains a multi-bit object mask field;

a module that processes incoming messages, wherein the module:

assembles a multi-bit screener ID from selected bits of each incoming message to be acceptance filtered;

compares the bits comprising the screener ID with corresponding bits of the object match ID field associated with each of at least designated ones of the plurality n of message objects, disregarding any bits of each object match ID field that are masked by corresponding bits of the associated object mask field; and,

determines whether any of the comparisons results in a match;

wherein any selected one or more bits of the object match ID field associated with each of the plurality n of message objects can be set to '1' or '0', and any selected one or more bits of the object mask field associated with each of the plurality n of message objects can be set to '1' or '0' in order to mask any selected one or more bits of the associated object match ID field, whereby the combination of the object match ID field and the object mask field associated with each of the plurality n of message objects comprises a fully programmable match and mask filter; and,

wherein $n \geq 3$.